

SCIENCE AND PROGRESS.

THINGS TALKED ABOUT IN THE WORLD OF SCIENCE.

Amateur Photographers Are Reminded of the Advantage of Keeping the Developing Fluid on a Plate in Constant Motion. How to Do It.

The advantage of keeping the developing fluid on a plate in constant motion is indisputable. The development proceeds more evenly, air bubbles are removed and spots and streaks are to a large extent prevented. In the illustration is shown a simple mechanical arrangement on the principle of the pendulum, which can be made by an amateur and will be found convenient.



Simple mechanical arrangement in photography.

La Nature, from which our cut was taken, says: The supporting framework is made of stout wire, covered with rubber tubing. Glass rods might be substituted if one has a little skill in glass blowing. It is only necessary to fill the tray with the developing fluid, immerse the plate, and set the apparatus in motion, which will continue for a period long enough for the development of the most refractory plate.

Collapsible Lifeboats.

Following in the wake of Berthou's patent unimmovable lifeboats that collapse into one-fifth their width for storage, come Chambers' patent unimmovable collapsible lifeboats. The following description of Chambers' boat occurs in Engineering: It is a craft of 30 feet length, 7 feet beam and 3 feet 4 inches depth, has a displacement of 11 tons and affords accommodation to 40 people. The depth of the boat proper is 14 inches, but above that is a canvas washboard fitted with galvanized iron stanchions and rails and hinged to the gunwale of the boat. When raised to the perpendicular the washboard locks itself into position by means of stays. In the ship the boat only occupies a space 18 inches in depth, so that three may easily be placed the one above the other and yet not occupy a greater height than the ordinary boat. There are formed around the inside of the hull something like forty air tight compartments, of over three tons space, which gives the boat greater buoyancy. The bottom of the boat is so arranged that it may be used as a raft in the event of its being overturned, and rods and ropes are fitted to enable any one in the water to get on to such a raft or to right the boat when overturned. The seats in the inside of the boat are formed into tanks for stores, provisions and distress signals. The advantages of these semi-collapsible boats may be appreciated when it is mentioned that had the same number of ordinary boats been placed on board the City of New York, nearly three times the space occupied would have been needed.

Here and There.

The importance of preserving fruits becomes evident in South Africa, where the soil is drier every year and springs and rivers less strong.

Owing to the perfection of her spinning machinery and the large amount of capital invested in the business, England spins more woolen and cotton yarn than all the other countries combined, and yarns are among the most important of her exports.

One of the annoyances connected with the use of instruments containing lenses, in the examination of the cavities of the body, is due to the fact that they become dim by the deposition of moisture. Dr. Stoeckert claims that this can be prevented by spreading a drop of glycerine on the lens.

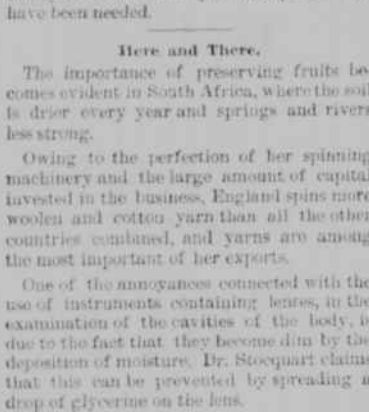
The rapid development of southern California has brought Lower California into prominence, and recent explorations have shown that it is not at all that desert land which it has long been supposed to be.

Statue in the Galvano-Plastic Process.

The monumental statue of the late Miss Hollis, of Boston, recently on exhibition at Tiffany & Co.'s, is believed to be the first statue done in this country in the galvano-plastic process. The sculptor, Mr. Carl Kold Smith, is a Dane by birth and does not belong to any school. He was educated at the Académie classique, but works after his own free, natural manner.

A Wheel Turned by Gas.

In the annexed cut is illustrated a very simple wheel, to be operated by gases, that was recently described in Scientific American as follows:



A GAS WHEEL.

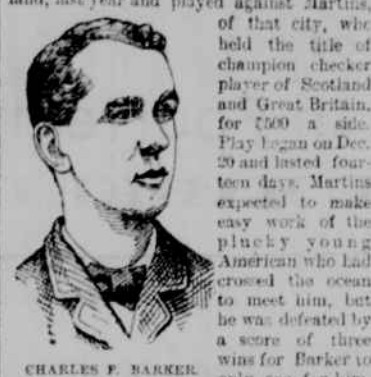
The wheel consists of a disk of light with a central shaft, and is provided around its periphery with buckets formed of squares of writing paper, attached to the periphery of the disk by two adjoining edges so as to form hollow cones, as shown. This knitted needle is journaled in wire or wooden standards, and lubricated so that it may turn freely. Carbonic acid gas may be generated in a pitcher and poured upon the wheel in the manner illustrated. By making the wheel large enough and carefully balancing it, it may be turned by liberating hydrogen gas under the mouths of the buckets.

Broncho-pneumonia of children has been treated in the hospitals of Paris with ipecacuanha to the extent of vomiting the patient occasionally, bromide of potassium to quiet the cough, and mild counter irritants applied to the chest.

CHAMPION CHECKER PLAYER.

Charles F. Barker, Who Will Go to England to Play James Smith.

Mr. Charles F. Barker, the champion checker player of America, sails for England the latter part of November, where he is to match his skill at checkers against that of the English champion, James Smith, of Spennymoor. The match is to be played in Spennymoor in December, and will consist of thirty-two unrestricted games for several hundred dollars a side. This will not be Barker's first trip across the water for the same purpose, as he went to Glasgow, Scotland, last year and played against Martins, of that city, who held the title of champion checker player of Scotland and Great Britain, for 1900 a side. Play began on Dec. 20 and lasted fourteen days. Martins expected to make easy work of the plucky young American who had crossed the ocean to meet him, but he was defeated by a score of three wins for Barker to only one for himself, with forty-five games drawn. Barker then offered to play Smith, but the latter would not make a match. Some time after his arrival home, he succeeded in arranging the match which he is now going to England to play. Barker is only 30 years of age, having been born in Boston, Mass., March 11, 1878. His home is now in Cambridge, Mass. It was in 1872 that he first attained prominence as a checker player, when he won first prize in an open tournament in Boston. Since that time he has played against nearly every player of note in the country, generally scoring victories. In June, 1879, he defeated M. C. Priest at Philadelphia by nine games to two, thirty-three being drawn. In January, 1885, he beat Priest again, with a score of three games to one, forty-eight being drawn. During 1881 he defeated James Reed, of Pittsburgh, Pa., twice, both games ending in four for Barker, one for Reed and forty-three drawn. One of his noted defeats was by Clarence H. Freeman, the Indian player, who held the championship of America at the time. This was in April, 1885, at Providence, R. I., for \$300 a side and the championship. Barker was defeated by a score of six games to three, with thirty-nine drawn. Freeman has played and beaten local players all over the country, and on April 23, 1887, at St. Paul, Minn., he played against five men simultaneously and defeated them all.



CHARLES F. BARKER.

The American champion hopes to meet Wyllie at the conclusion of his match with Smith, and if he succeeds in beating him his triumph will be complete. The men met over the checker board in Boston in October, 1882, but neither won, as the score was one win each and forty-eight games drawn. Wyllie is now in Australia, but he is expected to arrive in England about the date of the Barker-Smith match.

BASE HITS.

Terush and Mike Kelly still say that they are not going to Australia. The two Kellys—\$10,000 Mike and Umpire John—are to open a saloon in New York this winter.

The suits which the All American Baseball team will wear are made of white material, trimmed with dark red. The most striking thing about them is an American flag, which serves as a belt and hangs down slightly at the side. On the breast of the shirt is the name of the club of which the player is a member.

Hutchison, the Yale college pitcher, who works the ball this season for the pennant of the Western association for Des Moines, states that he will play next year for "Tex" Anson. "I have concluded to play ball for five or six years to come if the interest holds out," said he, "and I believe I might just as well be in a big club and play for all there is in it."

Treasurer Whitaker, of the Athletic club, says that the report that Cross, the Louisville catcher, has been secured was incorrect. Mr. Whitaker says that the Athletic club has no notion of signing Cross.

The Detroit club will be heavy losers, despite the fact that something like \$150,000 will be realized by the sale of its players and franchise. Up to the close of the present season the club was \$38,000 out of pocket.

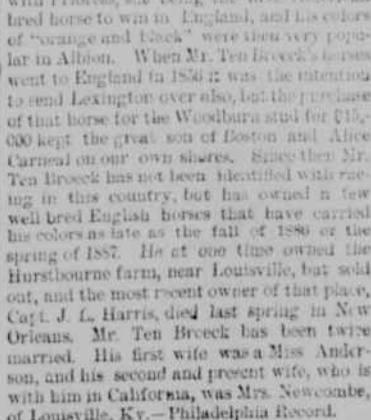
When asked if Harry Wright would manage the Philadelphia club another season, A. J. Reach said: "So far as I know he will. Nothing definite has been settled, but it is taken for granted that he will continue." Mr. Wright is by all odds the best non-playing manager in the business, and it is to be hoped that he will decide to make another try for the pennant with the "Phillies."

Richard Ten Broeck.

Richard Ten Broeck, who is reported to have become insane in California, is probably one of the best known turfmen in the country. He has been intimately connected with the turf of this country and England for nearly half a century. He owned the famous Lexington which he beat Sally Waters and Leconte in 1833, and ran his great race at New Orleans in April, 1854, doing the four miles in 7:19 1/2. In 1856 Mr. Ten Broeck took a stable of American bred horses to England, including Prior and Princess. He won the Cesarewitch handicap at Newmarket in 1857 with Prior, she being the first American bred horse to win in England, and his colors of "orange and black" were then very popular in Albion. When Mr. Ten Broeck's horses went to England in 1856 it was the intention to send Lexington over also, but the purchase of that horse for the Woodbury stud for \$15,000 kept the great son of Boston and Alice Carmel on our own shores. Since then Mr. Ten Broeck has not been identified with racing in this country, but has owned a few well bred English horses that have carried his colors as late as the fall of 1886 or the spring of 1887. He at one time owned the Hursbourne farm, near Louisville, but sold about the most recent owner of that place, Capt. J. L. Harris, died last spring in New Orleans. Mr. Ten Broeck has been twice married. His first wife was a Miss Anderson, and his second and present wife, who is with him in California, was Mrs. Newcombe, of Louisville, Ky.—Philadelphia Record.

Two Little Old Ladies.

Two little old ladies, one grave, one gay. In the self same cottage lived day by day. One could not be happy, "because," she said, "So many children were hungry for bread." And she really did not have the heart to smile. When the world was so wicked all the while.



ONE WAS GRAVE AND ONE WAS GAY.

The other old lady smiled all day long. As she knitted, or sewed, or crooned a song. She had no time to be sad, for her heart was full. When her children were crying for bread. So she laughed, and knitted, and gave away. And declared the world grew better every day.

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Grape Marmalade.

Put the grapes into a stone pot and set the pot into a kettle with cold water; set this on the fire and let the grapes boil for half an hour, then strain them off and jam with bowl of the spoon; take them up and strain through a sieve; to one quart of the pulp allow one pint of sugar and boil forty minutes.

YOUNG FOLKS' COLUMN.

ENTERTAINMENT AND INSTRUCTION FOR OUR GIRLS AND BOYS.

A Lesson or Two in Riding on Horseback That Will Be Found Useful to Beginners. How to Sit and How to Handle the Reins.

In a recent issue of Golden Days appeared some very sensible advice on the subject of "Ponies for Boys." Following are suggestions made about the "seat," the first mystery to be mastered, along with directions for holding the reins.



TOO SHORT, TOO LONG, CORRECT.

The first lesson should teach the young beginner that the bridle and reins are not intended for him to hold on by. Let a comfortable, padded saddle, with stirrups the right length, be put on a steady pony, and the groom lead the pony or make him walk or canter round in a circle, with a long, lungeing rein attached. Sit in an upright, easy position in the middle of your saddle, and try and keep there. Shoulders back and waist slack, and fold your arms across your chest, for we are not going to better you with any reins in your first lessons. You are now in a position to learn the three legitimate aids to the seat—viz., balance, grip and stirrups. The lower limbs should be attached to the pony like a centaur, sticking to your saddle like glue, and gripping with the knees like a vise, feeding the stirrups as a useful support. The trunk should be well balanced and flexible.

When confidence and a firm seat have been acquired, then the boy may be trusted with the bridle, because he will feel perfectly independent of holding on by it, and will only use it as a means to regulate the pace of his pony. The reins must be smoothly and lightly held, with the arms, hands and elbows in the right position, and the finest horseman regulate the paces from the motion of the wrists and fingers only. When you have settled on the right length to hold your reins so as to suit your pony's mouth, make a private mark on them, so that you can always pick them up again the same length. The reins should be held in the left hand, but the right hand should always be ready, and it is very often advisable to ride with both hands.

When riding with one hand, place the three fingers of the left hand—viz., the second, third and fourth—between the single rein, and then turn them over the first forefinger, when they will be held tightly by the thumb. The thumb should point between the pony's ears. This will insure the elbow being in the right place, close to the side, with a good control of the reins.

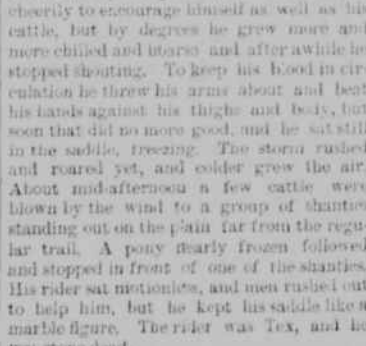
If young Nimrod has taken the trouble to do as he is told he will look very well on ponyback, for his seat will be square to the front, without either shoulder being in advance. The left hand with the reins just above the pommel of the saddle, elbows close to side, knees close to saddle and ready to grip it like a vise, toes slightly out, heels down, head up.

Died at His Post.

A good many boys think that the life of a cowboy in the far west is a very jolly one, while in point of fact cowboys have much hard work to do and are often exposed to the severest weather, and their lives are risked in the course of duty. The following story, written for Harper's Young People, illustrates this:

A cowboy known as "Tex" was ordered to drive a small herd of cattle from a certain ranch in the southern part of Nebraska to a station on the Union Pacific railway. It was a drive of only one day, and Tex started out alone very early one morning, believing that he would need no help to manage so small a number of cattle. During the forenoon Tex observed clouds gathering in the north, and he felt sure a storm was coming. He knew it was of no use to try to hurry the herd, but he felt a little uneasy, as storms in that locality are likely to be very severe. His fears were well grounded. Rapidly the wind increased, blowing dead against the cowboy and his charge. Colder grew the atmosphere, and a few snowflakes fell. A blizzard was coming, but Tex kept moving forward. Horses were fairly leaving him, and the air was bitter cold. Tex's cattle, with heads low down, breasted the storm and moved slowly along the trail. Tex shouted cheerily to encourage himself as well as his cattle, but by degrees he grew more and more chilled and weary, and after awhile he stopped shouting. To keep about and beat his hands against his thighs and back, but his hands grew numb, and he was not in a position to take any action. The storm rushed and roared yet, and colder grew the air. About mid-afternoon a few cattle were blown by the wind to a group of shanties standing out on the plain far from the regular trail. A pony nearly frozen followed and stopped in front of one of the shanties. His rider sat motionless, and men rushed out to help him, but he kept his saddle like a marble figure. The rider was Tex, and he was stone dead.

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ORIGIN OF FAMOUS POEMS.

Gray's immortal "Elegy" occupied him for seven years.

Bryant wrote "Thanatopsis" in the shade of a grand old forest—a fitting spot for such a theme.

Comper wrote one of the drollest and quaintest English ballads, "John Gilpin's Ride," when he was under one of those terrible fits of depression so common to him.

Gen. Lyle wrote his beautiful composition "Antony and Cleopatra," which begins, "I am dying, Egypt, dying," on the night before his death. He had a premonition that he was going to die the next day.

The noted poem "The Falls of Niagara" was written by its author, J. G. C. Brainerd, the editor of a small paper in Connecticut, in fifteen minutes. He wrote it under pressure in response to a call for "mere copy."

"After the Ball," the little poem which made the name of Nora Perry known in the world of letters, was jotted down on the back of an old letter, with no idea of the popularity it was to achieve in the pages of a noted magazine.

Thomas Moore, while writing "Lalla Rookh," spent so many months in reading up Greek and Persian works that he became an accomplished Oriental scholar, and people found it difficult to believe that his scenes were not penned on the spot instead of in a retired dwelling in Derbyshire.

Poe first thought of "The Bells" when walking the streets of Baltimore on a winter's night. He rang the bell of a lawyer's house, a stranger to him, walked into the gentleman's library, shut himself up and the next morning presented the lawyer with a copy of his celebrated poem.

The "Old Oaken Bucket" was first suggested to the author, Samuel Woodworth, in a bar room. A friend with whom he was drinking said that when they were boys the old oaken bucket that hung in his father's house was good enough for them to drink from. Woodworth immediately went home and wrote the famous poem.

"Old Grimes," that familiar "little felicity in verse," which caught the popular fancy as far back as 1823, was a sudden inspiration of the late Judge Albert G. Greene, of Providence, R. I., who found the first verse in a collection of old English ballads, and, enjoying its humor, built up the remainder of the poem in the same conceit.

It is now definitely settled that the romantic incidents narrated in Whittier's "Barbara Fritchie" had little foundation in fact, but that the story chiefly emanated from the fertile brain of the popular novelist, Mrs. E. D. N. Southworth, is not generally known. That such was the case, however, we have Mr. Whittier's own assurance.

The verses which lifted Brete Harte into notice were carefully written, and thrown into a drawer of his editorial desk in San Francisco as unworthy of publication. One day, in search of "copy" for the magazine he was then editing, he found the forgotten lines, which, as "The Heathen Currier," made one of the most remarkable hits in American literature.

Wordsworth wrote "We Are Seven" backward. When he had finished all but the first stanza, Coleridge, whom he was visiting, told him to go in and get his tea and he would finish it. Coleridge did so. The idea of the dead men pulling the ropes in the "Ancient Mariner," which would seem more like Coleridge than Wordsworth, was nevertheless suggested by the latter.

INCOMES OF RULERS.

The late Emperor William is credited with having saved \$12,000,000 out of his public allowance.

The president of the Argentine Republic contrives to pass his time quite nicely on \$30,000 a year.

Switzerland gets along pleasantly with a president who is satisfied with the modest salary of \$3,000 a year.

Oscar II of Sweden and Norway rules about comfortably on \$75,000, but his subjects graciously pay him.

The czar of Russia is credited with receiving \$12,500,000 and upward from domains; but upward is an unlimited term.

The king of Prussia (emperor of Germany) is not badly "fixed." The kingdom of Prussia pays him \$1,255,000, and besides this he has great private domains.

The sovereign of the dusky sons of sunny Italy annually takes \$3,000,000 out of the pockets of his impoverished subjects for the sole behoof of himself and kin.

Milan, king of Servia, has had a pretty tough time in governing his petty kingdom of less than 2,000,000. He and his kin cost the little limited monarchy \$240,000.

The ruler of Bavaria is allowed only \$1,307,500 a year, and out of this sum he has to pay for clothes and provisions for his family and to keep them in pocket money.

The Emperor Francis Joseph of Austria may be a wise and valuable shipper to have on board the ship of state, but with \$6,875,000 a year he is adequately recompensed.

The king of the Belgians has just about as much as he can do to keep himself supplied with pie and confectionery on the \$600,000 a year that his grateful subjects turn over to him.

France finds there is no lack of ambitious men to fill the office of president for the annual salary of 600,000 francs, or \$130,000, and an allowance of a similar amount for house and expenses.

The Greeks allow King George I. \$300,000 a year, but as that sum only just about pays his board bill, Great Britain, France and Russia pity him in his poverty and severally give him \$30,000 more.

From parliament her most gracious majesty draws as sovereign \$1,925,000 a year. Her position as sovereign makes her Duchess of Lancaster, and the net revenue from her duchy is about \$200,000 a year.

In the land of the Mikado, Emperor Mutsuhito has his family provided for, and his civil and military bills paid by the state, and for his separate use he has the modest sum of \$2,540,000 a year allowed him.

The "Sick Man of Europe," the sultan of Turkey, is the boss of a country which has long been bankrupt. Abdul Hamid II's "faithful" subjects, though as poor as church mice, have to disgorge annually for him and his \$7,500,000 and upward.

Alphonso XIII is as yet little more than a year old and is a pretty costly youngster—the most expensive youngster Spain has. He has numerous kith and kin, and both he and his army of relations have to be supported at the public expense, which amounts to \$2,000,000 a year.

Prince Nicholas of Montenegro, though he has been an absolute monarch for twenty-eight years, cannot be considered quite happy. It is true his humble subjects do the best they can for him and pay him \$20,000 a year, but if Russia did not come to his assistance his washerwoman would frequently go unpaid.

A fashionable Broadway, New York, jeweler makes superstition pay him tribute. He advertises amber necklaces "to prevent croup in children."

COMING SOCIAL QUEENS.

THE WIVES OF THE PRESIDENT AND VICE PRESIDENT-ELECT.

Mrs. Harrison Intellectual and Religious. Mrs. Morton, of New York Society—How They Are Likely to Affect Social Life at the Capital.

It is natural that at this time the nation should be thinking about the woman who is to be the next mistress of the White House. From the young Mrs. Cleveland, who has made so many friends, and who won the admiration of both Democrats and Republicans, the nation's eyes are to turn to Mrs. Harrison, a matron more than a quarter of a century older.

Both are marked women, however, though of different styles and ages.

When Benjamin Harrison was a student at Oxford, O., he met Miss Scott, the daughter of the professor of chemistry at the university. Professor Scott, who is now a very old man—he is over 80—has a position in the pension office at Washington. There was a love affair, with the inevitable result in those days in the west, when wealth was not a factor in such matters, and they were soon after married.

In her youth Mrs. Harrison lived in an atmosphere of study, and the influence then experienced affected her whole life. She is a woman of rare culture. She has long been a prominent and active member of the Ladies' Literary society of Indianapolis; she is fond of the fine arts, especially painting, and has done some dainty work herself on china. But the influence of study is not only refining; it stimulates the better feelings as well; and Mrs. Harrison not only devotes herself to her literary society and her painting, but is an earnest laborer in the field of the poor. A great deal of her attention is given to the Indianapolis orphan's home.

Mr. and Mrs. Harrison were married when very young. The husband was only 20 and the wife was younger. With only \$300 on which to begin the world, beside Harrison's theoretic knowledge of the law, gained by a study of his profession, the youthful couple went to Indianapolis. They settled in a one story frame cottage, and commenced a career that has never since known a check.

While Mrs. Harrison has never known great wealth she has never known poverty. Her husband has been sufficiently prominent to give her a position socially to which she is in every way fitted by nature. Her polish is, however, rather intellectual than that of the woman of fashion.

Mr. and Mrs. Harrison are also prominent in church circles. For years they have been in regular attendance at one of the Presbyterian churches in Indianapolis, and active in the Bible classes and Sunday schools. Doubtless this will have its effect in Washington society. The influence of the White House is all powerful there, and social circles during the winter of 1893-94 may, perhaps, wear a more subdued complexion than during the social administration of Mrs. Cleveland.

Mrs. Morton, who is to be the second lady in the land, partakes more of the type of New York's more brilliant social circles. Mrs. Morton, as her maiden name—Anne Livingston—indicates, comes from among the aristocratic families of the Empire State. She was born at Poughkeepsie, on the Hudson, a town as noted for its educational tone in New York as Oxford is in Ohio. It is there that Vassar college flourishes, and as Mrs. Morton is still a young woman, Vassar was founded not too late to bring to bear upon her through the society of Poughkeepsie something of the same influence brought to bear by the atmosphere of learning of Oxford upon Mrs. Harrison.

But Mrs. Morton has had other influences. She passed some time in New York society, where she met Mr. Morton. Their marriage followed. He is very rich, and his wife had always been accustomed to wealth. She is described as a woman of medium height, with large bluish gray eyes, white complexion and gray hair. She is the mother of five daughters, the oldest of whom is 14.

Whatever be the coming influence of these two women, there is doubtless as much speculation about it among the women of Washington society as there is about the future cabinet among the men. Time will show; but it is quite natural that the tone given to Washington society by each of these women who are so soon to be its leaders, will be a blending of the individuality of both, as shaped by education and previous social surroundings.

Canned sweet potatoes are the latest grocery novelty.

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